CLAIMS

1. A process for producing a polymer emulsion comprising fine particles of a polymer, said process comprising the steps of:

mixing water, a monomer, an emulsifier, and a polymerization initiator together to allow emulsion polymerization to proceed; and

adjusting pH of the resultant polymer emulsion to neutral or alkaline by adding a monovalent inorganic hydroxide.

2. The process according to claim 1, wherein the monovalent inorganic hydroxide is an alkali metal hydroxide.

3. The process according to claim 2, wherein the alkali metal hydroxide is one member or a mixture of two or more members selected from the group consisting of lithium hydroxide, sodium hydroxide, and potassium hydroxide.

4. The process according to claim 1, wherein the pH value is adjusted to 7 to 9.

5. The process according to claim 1, wherein the fine particles of the polymer contain 1 to 10% by weight of a structure derived from a carboxyl-containing unsaturated vinyl monomer, have a structure which is crosslinked by a crosslinkable monomer having two or more polymerizable double bonds, and contain 0.2 to 4% by weight of the structure derived from the crosslinkable monomer.

6. The process according to claim 1, wherein the fine particles of the polymer have a film-forming property, have on its surface a carboxyl group, and have a reactivity with a divalent metal salt such that, when 3 volumes of a polymer emulsion containing 0.1% by weight of the fine particles of the polymer is brought into contact with one volume of a 1 mol/liter aqueous divalent metal salt solution, the time required for the

transmittance of light having a wavelength of 700 nm to become 50% of the initial transmittance value is not more than 1 x 10^4 sec.

7. The polymer emulsion produced by the process according to any one of claims 1 to 6.

8. An ink composition comprising a pigment, a polymer emulsion, water, and a water-soluble organic solvent,

said polymer emulsion being one according to claim 7.

9. The ink composition according to claim 8, wherein the content of the fine particles of the polymer constituting the polymer emulsion is 0.01 to 30% by weight based on the total amount of the ink composition.

10. The ink composition according to claim 8, wherein the pigment has on its surface a hydrophilic group.

11. The ink composition according to claim 10, wherein the pigment having on its surface a hydrophilic group is carbon black or an organic pigment.

12. The ink composition according to claim 10, wherein the hydrophilic group present on the surface of the pigment is a sulfonic acid group ($-SO_2OH$) and/or a sulfinic acid group ($-RSO_2H$ wherein R represents a C_1 to C_{12} alkyl group or a phenyl group or a derivative thereof).

13. The ink composition according to claim 10, wherein the hydrophilic group present on the surface of the pigment is a sulfonic acid anion group ($-SO_3^-$) and/or a sulfinic acid anion group ($-RSO_2$ wherein R represents a C_1 to C_{12} alkyl group or a phenyl group or a derivative thereof).

14. The ink composition according to claim 10, wherein the hydrophilic group present on particles of the pigment is a carboxylic acid group ($-CO_2H$) and/or a carboxylic acid anion group ($-CO_2^-$).

15. The ink composition according to claim 8, which

further comprises a penetrating agent or a wetting agent.

16. The ink composition according to claim 15, wherein the penetrating agent is one or more members selected from the group consisting of 1,2-alkyl diols, glycol ethers, acetylene glycol surfactants, and acetylene alcohol surfactants.

17. The ink composition according to claim 16, wherein the 1,2-alkyl diol is 1,2-hexanediol or 1,2-pentanediol.

18. The ink composition according to claim 16, wherein the glycol ether is one or more members selected from the group consisting of dialkylene glycol monobutyl ethers, dialkylene glycol monopentyl ethers, dialkylene glycol monohexyl ethers, trialkylene glycol monobutyl ethers, trialkylene glycol monopentyl ethers, trialkylene glycol monohexyl ethers, tetraalkylene glycol monobutyl ethers, tetraalkylene glycol monopentyl ethers, and tetraalkylene glycol monohexyl ethers.

19. The ink composition according to claim 15, wherein the wetting agent is glycerin or trimethylene glycol.

20. The ink composition according to claim 15, wherein the content of the wetting agent is 10 to 20% by weight based on the total amount of the ink composition.

21. The ink composition according to claim 15, wherein the wetting agent is a solid wetting agent.

22. The ink composition according to claim 21, wherein the content of the solid wetting agent is 3 to 20% by weight based on the total amount of the ink composition.

23. The ink composition according to claim 21, wherein the solid wetting agent has the function of retaining water and is a water-soluble material which is solid at room temperature (25°C).

24. The ink composition according to claim 21, wherein the solid wetting agent is one or more members selected from the group consisting of saccharides, sugar

alcohols, hyaluronic acid, trimethylolpropane, and 1,2,6-hexanetriol.

25. The ink composition according to claim 8, which further comprises, as a pH adjustor, one or more members selected from the group consisting of potassium hydroxide, sodium hydroxide, and lithium hydroxide.

26. A recording method comprising the step of: depositing an ink composition onto a recording medium to perform printing, said ink composition being one according to any one of claims 8 to 25.

27. The recording method according to claim 26, which is an ink jet recording method comprising the steps of: ejecting droplets of an ink composition; and depositing the droplets onto a recording medium to perform printing.

28. A record printed by the recording method according to claim 27.